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give each other sympathy in their affliction. If one was castrated alone, he would die of grief. The Betsileo have a similar belief, but I could not learn whether it was universal among the Tanala. 825

Most of the Tanala territory is poorly suited to cattle culture because of the heavy forest and constant rain. It is only along the western margin of their lands, where they border on the plateau, that one finds real grazing country. The Tanala herds are usually small and, although cattle have great social significance, they contribute little to the physical well-being of the people. They are only killed in connection with ceremonies, and the average Tanala does not taste beef once a month. Indeed, cattle killings are so rare that to dream of cutting or eating beef is a bad omen, presaging a funeral in the family. Hides are so little used that, until European traders provided a market for them, it was customary to cut up the animals without flaying them and cook meat and skin together. 233 311 [262] [787] [439]

The Menabe consider milk a luxury, and it is almost impossible to purchase it in their territory. It is a by-product, taken only when the cow seems to have more than enough to feed her calf. Milking, like everything else connected with cattle, is done exclusively by men. The explanation given for this is that it is a dangerous occupation. Actually, it is a laborious process, requiring three persons. One man holds the calf where the cow can see and lick it, another milks, usually squatting on the right side, and a third holds the cow's tail over her back and gently rubs her vagina with his fingers. The milk is boiled at once, while still warm. It is considered disgusting to drink it fresh. After boiling, it is either drunk or cooked with rice. 234 462 [252]

The Ikongo make more use of milk and are somewhat more expert at milking, although they use the same method. They rarely boil their milk. A little is drunk fresh, but most of it is deliberately soured. A little sour milk is always left in the milking gourd so that the new milk turns almost at once. The curds are eaten with a spoon and the whey drunk. None of the Tanala know how to make butter or cheese. 234 252 [264]

Apparently cow's milk was rarely if ever used to supplement or replace mother's milk in feeding nursing infants. The idea has recently been borrowed from Europeans, but it is still considered rather unnatural and is used only as a last resort. 853 177

The wheel and plow were unknown in Madagascar prior to European contact. The Tanala never use their cattle for draught or transport and this holds for the rest of the island, with one or two exceptions. The Imerina and Betsileo now use ox carts and 177 492

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the juice being allowed to float downstream with the current. The 226
fish rise to the surface stupefied or dead and are taken by hand. A large quantity of roots is required and the whole lineage or even village usually takes part. At the present time the method is rarely used, because of the labor involved.

The natives are very fond of two sorts of crayfish. One of these has short legs and large claws, like a lobster, while the other has long legs and no claws. Parties often go several miles from the village to catch crayfish in the small, swift mountain streams, staying out all night. The animals are usually caught by the light of torches, which stupefies them so that they can be picked up. In the daytime they are lured from their holes by means of a white or glittering object on the end of a stick. A bit of tin from a can is now used. They are then caught by hand or between two bits of wood, to avoid their claws.

Eels and other fish are preserved by smoking, without salt. They 251
are not cleaned. The smoking is done on small platforms of open-work bamboo which are hung over the fireplace in the dwelling (Fig. 3, c). In spite of the crudity of the method, fish preserved in this way can be kept for a year or more and, when cooked in native fashion, are hardly inferior to the fresh article. Fish are nearly [252]
always boiled.

HONEY AND BEESWAX

Honey and beeswax are of great importance to all the Tanala. 231
The latter is one of their main exports. The native bees are rather [439]●
small and dark brown or black. Most of the swarms live in hollow trees or among the rocks, but the Tanala make hives, put them near old swarms, and wash them inside with honey in the hope that new swarms will settle in them. Such swarms belong to the maker of [422]
the hive, while wild swarms belong to the finder.

The hives are made from hollowed-out logs with loosely fitting, inset ends. The cracks around the ends are large enough to allow the insects to enter. The hives are usually 3 to 5 feet long and about 1 foot in diameter. They are laid horizontally in the forks of trees, often as much as twenty feet from the ground. This is to protect the swarm from animals.

To obtain the honey and wax, the swarm is first stupefied with 222
smoke from torches. The end of the hive is then pried out and all the comb removed at once, destroying the colony. A large wooden bowl of special form is used for collecting the honey (Fig. 4, e). The

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222 bowl has four equally spaced lugs which are pierced vertically. Slender ropes of equal length pass through these and are tied together above the bowl, where a single long rope is attached. Sometimes the bowl is encased in rawhide, as a precaution against breakage. A few specimens are provided with flat wooden covers which slide on the four small ropes. The honey bowl is hung from a limb beside the hive and lowered to the ground when full.

257 The comb is taken to the village, where it is put into a sack of coarse matting (Fig. 4, b) and the honey squeezed out by means of a press made from a split log (Fig. 4, c). The sack is inserted between the halves and the projecting ends of the press wrapped with a rope. A short stick is then passed through the rope and pressure exerted by torsion. The solid end of the press is fastened to a post or the corner of a house. The honey is collected in a bowl below (Fig. 4, f).

After pressing, the honey is strained through cloth or matting and stored in deep, oval wooden boxes (Fig. 4, a). The sides of the box are cut from a single piece. The bottom is a separate piece, accurately fitted, inset, and cemented in place with beeswax or [531] gum. There is a tight-fitting lid. The honey boxes of the Zafimaniry [171] gens are often elaborately carved. Identical honey boxes are used by the Betsileo and Imerina, but are rare or lacking in other areas.

263 Honey is considered best after it has begun to thicken and crystallize and it is usually kept for some weeks or months before being used. It is used for sweetening other foods and also eaten alone, [273] like candy. Much of it is employed in the manufacture of *betsabetsa* ("honey beer") and rum.

237 After the honey has been pressed out, the residue is boiled and strained to collect the wax. This is poured into shallow bowls, where [439] it solidifies. Most of the wax is exported. The natives themselves employ a little of it for coating blow-guns to make them airtight, for cementing the bottoms of wooden boxes, etc., but it is not important in their technology.

WILD VEGETABLE FOODS

222 137 The Tanala are familiar with a great variety of edible wild roots and fruits. These are gathered in their season, but are of little importance except in times of food shortage. At most, they afford a little variety to the standard diet of rice and boiled greens. The principal wild fruits are the *voasindriry*, *voandroy*, *voandongoza* and *via*. Wild roots include the *orylava*, *orytaretra*, *matika*, *antady*, *hofika*, *pikopiko*, and *hafy*.

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262 of plants. Thick stews of beans or ground nuts are the commonest accompaniment. Sweet potatoes are also eaten with rice, but manioc rarely is, because it is too tasteless.

252 Eggs, meat and fish are considered luxuries. Eggs are always boiled. Large fish are allowed to boil dry and then browned in their own grease. Meat is usually boiled, the broth forming an important part of the meal. Iron meat hooks with ornamental handles are used to remove it from the pot (Fig. 5, g). Meat may also be cut into thin steaks and broiled over a bed of coals. Iron toasting forks with three, five or seven tines are used for this (Fig. 5, h, j). At the present time, broiling is not popular, partly because much of the fat is lost and partly because of the extreme toughness of the native beef.

263 The only materials used for seasoning are potash, salt and chilies. The potash is a substitute for salt and now that the latter has become cheap and plentiful it is only used for variety. The natives say that it must be taken sparingly, as it is bad for the digestion. Potash is made by burning the roots of a certain rush, mixing the ashes with water, and straining off the liquor. The strainers are of matting, triangular at the rim and tapering to a point (Fig. 6, a). The liquor is put in shallow, wooden bowls and allowed to evaporate. The potash is pale gray and granular and is readily crumbled with the fingers.

263 [251] 439 Salt has always been obtained in trade. Formerly it came from the east coast, where the natives made it by evaporating sea water. It brought a high price locally and Tanala who left their territory to serve as bearers would bring back as much of it as they could. Even now it has an exaggerated value in the eyes of the natives. Traders told me that a handful of salt given with a purchase would delight them more than a gift of three or four times its real value.

263 The native salt comes in large, creamy white crystals. It is somewhat coarser than that we use in making ice cream. It often contains earth and other impurities and the Tanala dissolve it, pass it through strainers like those used in potash making, and then recrystallize it. It is kept in small gourds, joints of bamboo, or little sacks of cloth or matting.

415 263 The salt has to be crushed before use and every household has one or more small wooden mortars for the purpose. These mortars are commonly shaped like an hourglass and have a tight-fitting cover (Fig. 6, c). Sometimes two mortars are joined side by side, one being used for salt and the other for chilies (Fig. 6, d). There

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apprenticeship. A boy who becomes interested in the trade will hang 326
about the smith's workshop, blowing the bellows for him and doing other minor tasks. Finally he will be allowed to help with the forging and may accompany the smith on his travels. When he thinks that he knows the trade, he will set up in business for himself. No regular payment is made to the teacher, but if the new smith prospers, it is customary for him to visit his former master, thank him publicly, and present him with an ox.

Every smith has a house and land in some particular village and spends most of his time there. During the slack season between harvest and the next planting, the smiths travel about repairing old implements and forging new ones. When a man is in need of the smith's services, he first bargains with him, then, when the price has been fixed, takes him into his house and feeds him until the task is completed. Smiths seem to be much more numerous among the Ikongo than among the Menabe.

The stonecutters are mostly Betsileo living among the Tanala. 324
They go where their services are required and are similarly boarded during the work.

As far as I could learn, there are no ceremonial observances or 777
taboos connected with any industry. There seem to be no charms to give success in occupations, with the possible exception of house building, although I was unable to get a satisfactory check on this for metal working.

METAL WORKING

According to Tanala traditions, the aborigines of their territory 325
were ignorant of the use of metal, but the ancestors of all the invading 135
gentes were familiar with iron at the time they entered the region. The next metal to become known to them was silver. There are no known deposits of silver ore in Madagascar and the metal was [439] •
certainly obtained from Arabs or Europeans. Nevertheless, the Tanala have no legends of its introduction. It has been thoroughly incorporated into the culture, figuring in the invocations to the gods and in a number of rites and ceremonies. In general, it seems to occupy the place that gold occupies among the tribes of the plateau and west coast.

Gold, in the form of dust or small nuggets, is found throughout much of the Tanala territory, but the Tanala themselves make no use of it and seem to have no beliefs in regard to it. It does not figure in any ceremony, and is mentioned in only one or two invocations.

325 135 It seems probable that the Tanala were ignorant of its value, if not of its existence, until they were instructed by foreign traders. A few abandoned gold workings have been found by prospectors, and one or two caches of gold dust, but there is no way of determining their age.

325 439 Copper is still almost unknown, the only objects in use being a few bracelets obtained from the Betsileo. Brass, in the form of ornamental knife hilts and bracelets, is used by the Ikongo. They do not manufacture these articles, but buy them from the Bara, who are clever brass casters. The metal itself is of European origin and most of the knife hilts are made from old cartridge shells melted down.

135 326 438 The most important iron deposits are in the territory of the Tanala Ikongo. There are also deposits in the territory of the Zafimaniry, among the Menabe. There are a great number of smiths in this gens and they formerly carried on a regular trade in metal and finished implements with their neighbors. No account of Ikongo iron working was obtained, but their methods probably are the same as those of the Zafimaniry.

325 The ore used by the Zafimaniry is hematite, with a rich iron content. It occurs in the soil in the form of small pebbles and is simply washed preparatory to smelting. If the pieces are more than ¾ inch in diameter, they are broken up with hammers. The furnace is of the simplest sort (Fig. 10, c). A hole 2 to 2½ feet across and 18 inches to 2 feet deep is dug in the hard clay soil, with a sloping groove or trench entering it from one side, to accommodate a pipe leading to a bellows. The air pipe enters the pit 3 to 4 inches above the bottom. Sometimes a rim of clay 3 to 4 inches high is built around the furnace.

The smelting is done with charcoal, made by the ordinary European method. A layer of ignited charcoal is put in the bottom of the pit, then a layer of ore, then more charcoal and more ore until the furnace is filled. Two men work the bellows in shifts, keeping up a steady draft, and more charcoal is added as the mass burns down. The smelting requires about five hours. The molten iron collects in the bottom of the pit forming an ingot called *soromby*. This is drawn out and hammered as soon as it solidifies. Because of the small size of the furnace only a little iron can be smelted at a time. The metal is soft and malleable and the native smiths say that it is much easier to work than European iron.

The bellows employed in smelting and forging is typically Malayan (Fig. 10, a). It consists of two wooden cylinders from

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One of the most important forest products is raffia. This is not only an article of trade, but figures largely in native industries. The raffia palm usually grows in low, moist ground. It attains a height of from 20 to 30 feet. The natives cut the young fronds from the heart of the leaf head just before they begin to open. Care is taken not to cut too deeply, which would injure the tree. The leaflets are then cut from the midrib. 314 824

The raffia fiber is a thin, tough membrane which covers both the inner and outer surface of the leaflet. It must be stripped while the leaflets are still fresh. The membrane is loosened from the leaflet at its base, the operator using his thumb nail. A dozen or more leaflets are then gathered into a bundle and the ends of the membranes seized and stripped off with a single long pull. The raffia strips are then knotted together at the small end and hung over horizontal poles to dry. They are kept in the shade for about a day, then completely dried in the sun. When dry, the raffia is done up in large twists and is then ready for the market (Fig. 14, c). The native use of raffia for cordage and in weaving has already been described.

The natives also gather various wild resins and gums for trade to Europeans, but they make little use of them themselves. [439]

PROPERTY AND INHERITANCE

To the casual visitor it appears as though all the inhabitants of a Tanala village were on much the same economic level. There are no marked differences in the housing, clothing or food of the different families. No one appears rich, but, on the other hand, there are few signs of extreme poverty. The only individuals who seem really poor are a few old women living alone. It is only on closer acquaintance that one begins to realize the extreme importance of property in the social structure. 511 556

The material wants of the Tanala are few and easily satisfied, but property looms as large to them as to any group of European peasants and their attitude toward it is much the same. There is no display of wealth and all unnecessary expenditures are frowned upon, but there is a great love of money for its own sake. Any actual cash which comes into their hands is carefully hoarded. In spite of the severe penalties for theft and its relative rarity, the natives do not trust even their own families where money is concerned. A man who has a hoard of silver keeps it buried in some place known only to himself and usually does not divulge the fact even to his heirs until he thinks he is about to die. 556 454

531 part, as small figurines of men and animals which are made for sale
322 to Europeans, and is indistinguishable from that of the Bara.

Among the Menabe, other than the Zafimaniry, there are no professional carvers. However, men who make large ladles for sale now decorate the handles of these with simple designs. The handle is first blackened for a few inches above the bowl. This may be done either by searing the wood with a red-hot iron and then rubbing the charred surface with a rag dipped in grease, or simply by rubbing with a mixture of grease and soot. The designs are then cut through this black layer, exposing the lighter wood beneath. They are large and very simple. They consist of bands, spots, etc., symmetrically arranged (Fig. 7, d). The carving is so shallow that when the black color has disappeared through use it is often difficult to tell whether the ladle has been decorated or not. I could not trace the origin of this type of decoration, but it is said to be a recent development. It may have been borrowed from either the Bara or the tribes of the southeast coast, both of whom use a similar technique. The ladle makers say that it increases the salability of their wares.

The Zafimaniry are excellent wood carvers and, in former times, decorated their houses, beds, and some of their wooden utensils with beautiful and rather complicated designs. At the present time wooden houses and the large enclosed beds (see Dwellings) are obsolete, but the
[488] carving of utensils is still common. Zafimaniry carvings are in demand with Europeans and civilized natives and they have recently begun to produce objects of new types, especially folding tables and purely ornamental boxes. The latter are rectangular, a shape unknown in ancient times (Figs. 32, e; 33, c; 34, a), or graceful modifications of the comb-topped type formerly used for tinder boxes (Fig. 33, a, b). At the time of my visit there was even a small factory at Ambositra, where several Zafimaniry carvers worked under the direction of the
[171] Imerina owner. The products of this factory were marketed in the capital. Although the carvings made for sale are technically inferior to the old work and rarely show the more complicated designs, there has been little European influence on the art itself. In over a hundred specimens which I examined I could not detect a single European motif.

322 The Zafimaniry say that their art of carving was already fully
173 developed when they entered the Tanala territory from the plateau.
531 However, they have certain stories in regard to its development which probably contain much truth. They say that, in the earliest times, they did not carve designs but decorated their wooden objects